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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LG DISPLAY CO., LTD.

Appeal 2010-010802
Reexamination Control 90/008,145
United States Patent 6,002,457
Technology Center 3900

Before SCOTT R. BOALICK, KARL D. EASTHOM, and STEPHEN C.
SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Patent owner (Appellant) appeals under 35 U.S.C. §§ 134(b) and 306
from a final rejection of claims 1-52.² We have jurisdiction under 35 U.S.C.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" shown on the PTOL-90A cover letter attached to this decision.

§§ 134(b) and 306. An oral hearing scheduled for October 28, 2010 was waived.

We affirm-in-part.

STATEMENT OF THE CASE

This proceeding arose from a request for *ex parte* reexamination filed by Bruce K. Lagerman on August 3, 2006, of United States Patent 6,002,457 (the '457 Patent) issued to Hee Young Yun, Kyo Hun Moon, Byeong Yun Lee, Yong Bum Kim, and Young Un Bang on December 14, 1999, based on United States Application 09/178,832 filed October 26, 1998. Reexamination of claims 1-52 was requested. Presently, claims 1-52 stand rejected.

Patentee's invention relates to a liquid crystal display (LCD) device in which "the assembling or fastening devices are located at the side surface of the display and not at the front or back side" (col. 5, ll. 10-12).

Claim 1, which we deem to be representative, reads as follows:

1. A liquid crystal display device comprising:
a liquid crystal panel adjacent the first frame and having a display surface; and
a second frame coupled to the first frame and having a fastening part at at least one side edge of the second frame, the side edge being substantially perpendicular to the display surface of the liquid crystal panel;

wherein the liquid crystal display device is fixable to a housing through the side edge.

² Patent owner (Appellant) LG Display Co., Ltd., is the real party in interest for this appeal and assignee of record of U.S. Patent 6,002,457 "Computer Having Liquid Crystal Display" (issued December 14, 1999).

The prior art references relied upon by the Examiner in rejecting the claims are:

Komano	US 5,375,005	Dec. 20, 1994
Aguilera	US 5,666,261	Sep. 9, 1997
Masanori	JP 07099394 A	Apr. 11, 1995

Admitted Prior Art, US Patent No. 6,002,457 – Figs. 1, 3b, 4, and 5 (“APA”).

The Examiner rejected claims on the following bases:

- (1) claims 1, 2, 5, 6, 23, 24, 27-29, 31-34, 41-43, 45, and 46 under 35 U.S.C. § 102(b) as being anticipated by Masanori;
- (2) claims 13-17 under 35 U.S.C. § 102(a) as being anticipated by APA;
- (3) claims 18-22 under 35 U.S.C. § 102(a) as being anticipated by APA, or in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over APA and Komano;
- (4) claims 4, 8-10, 12, 26, 36-38, 40, 47-49, 51, and 52 under 35 U.S.C. § 103(a) as being unpatentable over APA and Masanori;
- (5) claims 3, 7, 25, 30, 35, and 44 under 35 U.S.C. § 103(a) as unpatentable over Masanori and Aguilera;
- (6) claims 11, 39, and 50 under 35 U.S.C. § 103(a) as unpatentable over APA, Masanori, and Aguilera;
- (7) claims 1, 9, 10, 18-23, and 38 under the judicially created doctrine of obviousness-type double patenting.

ISSUES

Appellant argues that “Masanori fails to teach ‘a liquid crystal panel adjacent the first frame’” (App. Br. 26-27) and also “does not teach a housing . . . or any device fixable to a housing through a side edge” (App. Br. 27).

Appellant also argues that “APA does not teach that the first and second support frames and the outer casing are connected” (App. Br. 28) or “a fastening part joining together the first and second support frames and the outer casing through the portion of the first support frame” (App. Br. 31).

Appellant also argues that “[t]he combination of the APA and Masanori is improper” because there is “no problem to be solved . . . [and] no reason to modify the APA with the teachings of Masanori” (App. Br. 34) and “no reasonable expectation of success of the combination” (App. Br. 37).

Appellant also argues that APA (App. Br. 40) and Komano fail to disclose or suggest first and second frames attached to each other through the side edges of the first and second support frames (App. Br. 41) and that “one of skill in the art would not have had a reason to combine Komano with the APA or any reasonable expectation of success” (App. Br. 42).

Appellant argues that “enormous commercial success of the sidemount invention, the industry wide copying and adoption . . . and its incorporation as an industry standard . . . demonstrate the nonobviousness of the sidemount invention” (App. Br. 64-65).

Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made

but chose not to make in the Briefs have not been considered and are deemed to be waived. See 37 C.F.R. § 41.37(c)(1)(vii).

Thus, we identify the following issues:

- (1) Did the Examiner err in finding that Masanori discloses a liquid crystal panel adjacent the first frame as recited in claims 1-4 and 23-32?
- (2) Did the Examiner err in finding that Masanori discloses a housing as recited in claims 1-12, 23-32, and 33-52?
- (3) Did the Examiner err in finding that APA discloses a fastening part joining together the first and second support frames and the outer casing through the portion of the first support frame that is coupled to the second support frame, as recited in claims 13-17?
- (4) Did the Examiner err in finding that APA or APA and Komano discloses or suggests a first and second support frame attached to each other through the side edges of the first and second support frames as recited in claims 18-22?
- (5) Did the Examiner err in finding that it would have been obvious to one of ordinary skill in the art to have combined the APA and Komano references?
- (6) Did the Examiner err in finding that it would have been obvious to one of ordinary skill in the art to have combined the APA and Masanori references?
- (7) Did the Examiner err in finding that the claimed invention as recited in claims 3, 4, 7-12, 18-22, 25, 26, 30, 35-40, 44, and 47-52 would have been obvious to one of ordinary skill in the art in view of Appellant's asserted secondary considerations?

(8) Did the Examiner err in finding that claims 1, 9, 10, 18-23, and 38 are not patentably distinct from claims 9-13 of commonly-owned U.S. Patent No. 5,835,139 (the “139 patent”)?

FINDINGS OF FACT

1. The Specification discloses a “first support frame 190 . . . a reflector 140, a light guide 130, a protection sheet 150, a first prism sheet 160, a second prism sheet 170, a diffuser 180, and a liquid crystal panel 300 are stacked sequentially” (col. 4, ll. 38-42; Fig. 6).
2. The Specification discloses that “a second support frame 400 . . . is mounted at the side surface of the first support frame 190” (col. 4, ll. 49-51) and that “at the side surface of the second support frame 400, a plurality of second screw holes 410b aligned with the first screw holes 410a are formed (col. 4, ll. 51-54; Fig. 6).
3. The Examiner finds that Masanori discloses “**a first frame** (Figure 3, bottom portion of the LCD module 1 . . .) . . . **a liquid crystal panel** (LCD panel 2) **adjacent the first frame . . . and a second frame** (Figure 2, ‘vessel’ 6) coupled to the first frame” (Ans. 5).
4. Masanori discloses a “liquid crystal module 1 having a liquid crystal display panel 2” that is inserted into and attached to a “chassis 8” (Abstract, Fig. 1).
5. Komano discloses “claw portions for engaging the front and rear frame members **43** and **44** of the support frames **13** with each other” and “recesses engaged with the claw portions **78**, the claw portions **78** being bent

at the recessed portions **78a** to fix the front and rear frame members **43** and **44** to each other” (col. 6, ll. 61-66, Fig. 1).

6. The Specification discloses a “side surface of [a] second support frame **400**” (col. 4, ll. 51-52) with “screw holes **410b**” (col. 4, l. 53) and “third screw holes **410c** aligned with second screw holes **410b**” (col. 4, ll. 59-60), through which “[t]he rear case **500** and the liquid crystal display device **700** are joined to each other by fastening devices such as screws **430**, which are locked to the second and third screw holes **410b** and **410c**” (col. 4, ll. 60-63).

PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses, expressly or under the principles of inherency, each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

ANALYSIS

(1) Claims 1-4 and 23-32 – A liquid crystal panel adjacent the first frame

The Examiner finds that Masanori discloses a first frame adjacent to a liquid crystal panel (FF 2). Appellant argues that claim 1 requires the “first frame” to be “adjacent” to the liquid crystal panel and offers a definition of the term “adjacent” to indicate “near, close or neighboring” (App. Br. 23). According to Appellant, the “first frame” of Masanori “cannot [possibly] be ‘near, close or neighboring’ to liquid crystal panel 2” because “the cited feature . . . is on the opposite side of the device from the liquid crystal panel 2” and “could not be more distant in the device” (App. Br. 23).

We disagree with Appellants’ contention that Masanori fails to disclose a first frame adjacent to a liquid crystal panel based on a definition of the term “adjacent” consistent with the Specification. The Specification discloses a “first frame 190” that is adjacent to a liquid crystal panel but is also separated from the liquid crystal panel by a reflector, a light guide, a protection sheet, a first prism sheet, a second prism sheet, and a diffuser (FF 1-2). As described above, the Specification also discloses a second frame that has a fastening part on a side edge, the side edge being fixable to a housing (FF 6).

We adopt a definition of the term “adjacent” in light of the Specification to include “near” but possibly separated by several layers based on the fact that the first frame disclosed in the Specification, while located “near” the liquid crystal panel, is separated from the “adjacent” liquid crystal panel by several layers. Masanori discloses a liquid crystal panel (element 2, Fig. 3) separated from a first frame (element 1, Fig. 3) by a

base plate (element 3, Fig. 3) but still located “near” (or “adjacent”) the first frame. We therefore agree with the Examiner that Masanori discloses a first frame adjacent the liquid crystal panel and we find no error in the Examiner’s rejection of claims 1-4 and 23-32 with respect to this issue.

(2) Claims 1-12, 23-32, and 33-52 – A housing

As set forth above, Masanori discloses a “chassis” into which a liquid crystal panel is inserted and attached (FF 4). Appellant argues that “a chassis [is] not a housing” but fails to indicate an explicit definition of the term “housing” in the Specification that differentiates a “housing,” as would be understood by one of ordinary skill in the art, from the “chassis” of Masanori.

In the absence of an explicit definition of the term “housing” in the Specification, we agree with the Examiner that a plain and customary construction of the term “housing” includes “a case, enclosure, or something that covers or protects” (Ans. 18). For example, a “housing” may include a “structural member . . . to admit the insertion of part of another” (*Webster’s Third New International Dictionary*, Unabridged, 1961). Since the “chassis 8” disclosed by Masanori (Fig. 1) admits the insertion of the liquid crystal display panel 2 (Fig. 1) and is a “case” or “enclosure”, we identify no differences between the chassis of Masanori and a “housing” (i.e., “case” or “enclosure”) that “admit[s] the insertion of part of another [structure].” Nor has Appellant indicated any differences.

Therefore, we find no error in the Examiner’s rejection of claims 1-12, 23-32, and 33-52 with respect to this issue.

(3) Claims 13-17 – A fastening part joining together the first and second support frames and the outer casing through the portion of the first support frame that is coupled to the second support frame

The Examiner finds that APA discloses “two support frames, 19 and 40, and the casing 50 are joined together by four screws threaded through screw holes 41, 51 and unnumbered holes on 19” (Ans. 8). However, the Examiner has not demonstrated that the screws that thread through screw holes 41 and 51 both join the first and second frames together and also join the outer casing through the portion of the first support frame coupled to the second support frame. The Examiner has not indicated where the first and second frames are joined. Nor is it clear precisely where the first and second frames are joined. However, the screws (APA Fig. 5, element 43) appear to penetrate the first frame, the second frame, and the casing, in that order, rather than joining the first and second support frames to the outer casing through the portion of the first support frame that is coupled to the second support frame. In fact, it does not appear, and the Examiner has not shown, that the screws penetrate the portion of the first frame that is coupled to the second support frame at all.

Therefore, we find that the Examiner erred in rejection claims 13-17 as being anticipated by APA.

(4) Claims 18-22 – A first and second support frame attached to each other through the side edges of the first and second support frames

As set forth above, Komano discloses connectors located on a side edge of a frame (i.e., “claw portions” 78 that engage “the front and rear frame members 43 and 44 of the supporting frames 13 with each other” – col. 6, ll. 61-63, Fig. 1). Since the frames of Komano are attached to each other via “claw portions” and since the “claw portions” (and corresponding “recessed portions”) are located on the side edges of the corresponding frames, we agree with the Examiner that Komano discloses that frames are attached to each other through side edges (i.e., where the claw portions connect through recessed portions of the frames).

Appellant argues that “Komano teaches connections through the holding elements, not through the frames or side edges thereof” (App. Br. 41) but does not explain how Komano’s disclosure of attaching support frames together through “claw” and “recessed” portions at the side edges of the frames differs from the claimed feature of a first and second support frame attached to each other through their side edges.

Therefore, we find no error in the Examiner’s rejection of claims 18-22 with respect to this issue.

(5) Claims 18-22 – Combination of APA and Komano

APA discloses a computer liquid crystal display including a liquid crystal panel within attached supporting frames that is attached to a casing (Figs. 1-5). Likewise, Komano discloses a computer liquid crystal display

device that includes a liquid crystal panel within attached supporting frames (Abstract), the supporting frames being attached via their side edges (FF 5).

Both APA and Komano disclose known methods and structures of providing and constructing computer displays using a liquid crystal panel within attached supporting frames. Komano further discloses the known structure of the liquid crystal panel in which the supporting frames are attached via their side edges. The combination of the known features of computer liquid crystal panel structures would have entailed no more than the mere combination of known elements (supporting frames and liquid crystal panel devices) to produce a predictable structure, namely, a computer liquid crystal panel device in which the supporting frames are attached to each other via their side edges. In fact, Komano explicitly discloses such a structure in which the supporting frames are attached via their side edges. For at least these reasons, we agree with the Examiner that it would have been obvious to one of ordinary skill in the art to have combined the APA and Komano references. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co.* 550 U.S. at 416.

Therefore, we find no error in the Examiner's rejection of claims 18-22 with respect to this issue.

(6) Claims 4, 9-12, 26, 36-40, and 47-52 – Combination of APA and Masanori

As set forth above, APA discloses a computer liquid crystal display including a liquid crystal panel within attached supporting frames that is

attached to a casing (Figs. 1-5). Likewise, Masanori discloses a computer liquid crystal display device that includes a liquid crystal panel within attached supporting frames attached to a casing (Abstract, Figs 1-3).

Similar to our discussion above, we agree with the Examiner that the combination of the known methods and structures of APA and Masanori (i.e., liquid crystal displays attached to supporting frames and a casing) would have been obvious to one of ordinary skill in the art since such a combination of known elements would have produced no more than a predictable result – namely, a computer liquid crystal panel device containing a liquid crystal display and supporting frames attached to a casing or housing. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co.* 550 U.S. at 416.

Therefore, we find no error in the Examiner’s rejection of claims 4, 9-12, 26, 36-40, and 47-52 with respect to this issue.

(7) Claims 3, 4, 7-12, 18-22, 25, 26, 30, 35-40, 44, and 47-52 - Secondary Considerations

Appellant argues that the claimed invention “is directly responsible for the commercial success of products embodying Appellant’s invention” (App. Br. 53). In support of this contention, Appellant state that “shipments of large display notebooks (13.3 inch and greater) rose to 65% [citing Display Search Quarterly Supply vs. Demand Study: Notebook PC Report 4Q], including 43.5% growth for 14.1-inch laptops” (*id.*) and that a “dramatic, unprecedented growth in sales of 14.1-inch laptops [is

attributable] . . . to the worldwide adoption of the sidemount invention” (App. Br. 58). Appellant also argues that manufacturers “have also experienced great commercial success in the sale of LCD modules incorporating the distinguishing features of the sidemount invention” (App. Br. 59).

However, as the Examiner states, Appellant fails to establish a nexus between the alleged increase in sales of 14.1-inch laptops and the claimed invention. “The law deems evidence of . . . some causal relation or ‘nexus’ between an invention and commercial success of a product embodying that invention, probative of whether an invention was non-obvious.” *Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc.*, 395 F.3d 1364, 1376 (Fed. Cir. 2005).

Appellant cites data from “DisplaySearch Quarterly Supply vs. Demand Study: Notebook PC Report 4Q” (hereinafter, “DisplaySearch I”) as allegedly demonstrating market demand for the disputed sidemount technology (App. Br. 57-58). DisplaySearch states that “to introduce a greater number of [15-inch] display-based notebooks, [14-inch notebooks] will become more dominant in the mid-range space pushing [13.3-inch] products out of the market as the price differential between [13.3-inch] and [12.1-inch products] will hurt its chances in the low end. [14.1-inch] products, which have a better dot pitch for viewing XGA, are expected to boost their market share from 18% in Q3’98 to 38% in Q3’00” (DisplaySearch Quarterly Supply Vs. Demand Study: Notebook Panels, Q4’98 – hereinafter “DisplaySearch II” – p. 11). Thus, DisplaySearch II predicted a sharp increase in sales over the time period in question of 14.1-

inch laptops by pushing 13.3-inch products out of the market and providing a better dot pitch for viewing XGA, neither of which Appellant asserts to be related to the claimed invention. Appellant has not shown that any increase in sales was caused by “sidemount” technology rather than being caused instead by any number of other factors including, for example, notebooks having “a better dot pitch for viewing XGA” or “pushing [13.3-inch] products out of the market” as predicted by DisplaySearch.

Indeed, according to the Declaration of Thomas R. Varner, Ph.D. dated February 3, 2009, (“Varner Declaration”), shipments of 14.1-inch LCD panels rose from 18.9% (in 1999) to 59.2% (2002) while 12.1/13.3 inch LCDs decreased from 61.5% (1999) to 13.2% (2002) (Varner Dec’l ¶ 5) supporting predictions set forth by DisplaySearch that sales of 14.1-inch laptops would increase while sales of 13.3-inch laptops would decrease based on factors other than the “sidemount technology.”

We also find Appellant’s argument that competitors “incorporated the sidemount invention claimed” (App. Br. 60) to be only minimally probative of nonobviousness since Appellant has not provided any convincing evidence indicating any significance of such alleged use by competitors or that the competitors were, in fact, even copying the claimed invention in the first place. For example, Appellant argues that “Mr. Phillips found that the structures of the [inspected] modules . . . incorporated the sidemount invention” and that “Mr. Choi likewise found that every single notebook LCD panel over 14.0 inches that he inspected . . . was constructed with sidemount holes for sidemounting the LCD to the notebook” (App. Br. 60) but fails to indicate how many notebooks were inspected with respect to the

total number of notebook LCD panels on the market. Thus, no statistical significance can be attributed to the data presented in the argument, even if true, that “[t]he LCD modules that Messrs. Phillips and Choi inspected were incorporated into laptop or notebook computers sold by major computer manufacturers” (App. Br. 60).

In addition, Appellant argues a nexus between the claimed “sidemount technology” of “moving the mounting holes to the side surface of the module” (Declaration of Samuel R. Phillips ¶16) with competitor copying and adopting into an industry standard. However, as we stated above, Masanori (which predates the ‘457 patent) discloses a frame in a liquid crystal panel device that has a fastening part at a side edge and is fixable to a housing through the side edge (i.e., Masanori discloses the “sidemount technology”). Appellant has not demonstrated that any alleged copying or adopting into an industry standard could not have resulted from copying or adopting from the earlier Masanori disclosure rather than from the ‘457 patent. In fact, if any copying occurred, it would appear that such copying would have been from an earlier published reference source (e.g., the Masanori reference).

Thus, we find no error in the Examiner’s rejection of claims 3, 4, 7-12, 18-22, 25, 26, 30, 35-40, 44, and 47-52 with respect to this issue.

(8) Claims 1, 9, 10, 18-23, and 38 – Obviousness-type double patenting

Appellant states that “Appellant will consider filing a Terminal Disclaimer” (App. Br. 21) and presents no arguments against this rejection. As such, we summarily sustain this rejection.

Conclusion

The Examiner did not err in finding that Masanori discloses a liquid crystal panel adjacent the first frame and a housing, that APA and Komano discloses or suggests a first and second support frame attached to each other through the side edges of the first and second support frames, that it would have been obvious to one of ordinary skill in the art to have combined the APA and Komano references or the APA and Masanori references, and that the claimed invention as recited in claims 3, 4, 7-12, 18-22, 25, 26, 30, 35-40, 44, and 47-52 would have been obvious to one of ordinary skill in the art in view of Appellant's asserted secondary considerations.

However, we find that the Examiner erred in finding that APA discloses a fastening part joining together the first and second support frames and the outer casing through the portion of the first support frame that is coupled to the second support frame.

DECISION

The Examiner's decision to reject appealed claims 1-12 and 18-52 is affirmed. The Examiner's decision to reject appealed claims 13-17 is reversed.

Requests for extensions of time in this ex parte reexamination proceeding are governed by 37 C.F.R. § 1.550(c). See 37 C.F.R. § 41.50(f).

AFFIRMED-IN-PART

Appeal 2010-010802
Reexamination Control 90/008,145
Patent 6,002,457

ack

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